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ABSTRACT

This paper examines the development, organization, and administration of The Center for Individualized Instruction (CII) at Middlesex Community College (Massachusetts), which is designed exclusively for the nontraditional delivery of college courses across the disciplines as an alternative to the college classroom. The paper traces the evolution of CII, both conceptually and organizationally, since its inception in 1982. The conceptual model includes the rationale for CII; its goals and objectives; the relationship between CII and the classroom; and the purchase of course materials and instructional design procedures. The various components of the educational management system are also discussed, including the communication system; the registration/scheduling system; the records-keeping system; the course-management system; and the monitoring system. A profile of the staff is also presented. The reasons students take courses at the CII are identified, with the major reason being the degree of personal accountability and absence of anonymity. The quality of instruction at the CII is given a high rating by students, who find the educational experience a positive one. (DJR)

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THE CENTER FOR INDIVIDUALIZED INSTRUCTION: AN ALTERNATIVE TO THE TRADITIONAL COLLEGE CLASSROOM

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Introduction

The Center for Individualized Instruction (CII) at Middlesex Community College, a suburban college located 20 miles from Boston, is unique. An alternative to the traditional college classroom, it represents a radical departure from the conventional collegiate instructional model and requires adoption of much that is new. This paper traces the evolution of the CII, both conceptually and organizationally, from its beginnings.

The CII, as it exists today, was not established until 1982. Earlier, following the lead of other colleges in the mid-70's and confounded by the extremes of academic diversity in the classrooms, Middlesex Community College established a small learning center within the Department of Learning Resources. Unfortunately, the learning center quickly became identified as a place for students with academic deficiencies, often the fate of instruction that takes place outside of the traditional classroom. As such, it was not able to provide the instructional diversity which was needed, and, in fact, impeded efforts to involve faculty across the disciplines in the much needed reevaluation of the role of teaching in the community college.

In time, it became apparent that another kind of structure was needed, one which would support, confer legitimacy on, and provide leadership in the search for instructional alternatives.

Finally, in 1982, Middlesex Community College created a new academic division, equal in all respects to the five existing academic divisions, and the author of this paper was made the Division Chairperson. The new Division of Collegiate Studies was charged with responsibility for several academic tasks, chief among which was coordination of individualized instruction and alternative instructional systems. The College's decision to incorporate the non-traditional, i.e. instructional alternatives, within a traditional academic divisional structure was a critically important one.

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The CII, as it exists today, came into being at that point.

The Conceptual Model

The CII was conceived as an academic center which would introduce a composite individualized instructional system as an alternative to the college classroom across the disciplines. Courses would be given in the CII which would be identical to courses given in the classrooms in content, credit, and credibility. A new kind of teaching faculty would constitute the CII Professional Staff. Different modes of instruction would be used to accommodate different learning styles. A management system would be implemented which would free teachers to teach in a new way and free students to learn in a new way. The CII would combine flexibility and rigor and it would offer opportunities for learning which previously had been denied to many adult students. It would be a place where all students -- smart ones, not-so-smart ones, old ones, young ones -- would be able to go without difficulty, would be indistinguishable from one another, and would learn. The CII would evolve from and be indebted to the creative efforts of those who designed individualized instructional systems over the years: to the programmed text and to those who advocate that programming is a process: to PSI: to the audio-tutorial: to mastery learning theory. And the CII would also reach into the future by use of the instructional technologies of the video and the computer.

Goals and Objectives

From its inception, all aspects of the organization and administration of the CII have been designed to implement the basic principles of individualized instruction:

1. To free the teacher to be more creative in designing teaching/learning activities for and in working with the individual student.

2. To use technology from the programmed text to the computer in order to provide students with a variety of instructional approaches to the attainment of objectives.

3. To provide opportunities for individuals to learn at different rates and in different ways via the instructional design of courses and the educational management system.

4. To enable students to become actively involved in the primary mode of instruction by using instructional materials with a high degree of self-instructional capability.

5. To provide opportunities for frequent testing and guided feedback via the instructional design of courses and the educational management system.

6. To implement a system of integrated design for each course and for the teaching/learning process involving:

    a. stated learning goals or objectives
    b. measurement of students' knowledge and skills before instruction
    c. specified and diversified instructional modes and activities for attainment of objectives
    d. measurement of students' knowledge and skills after instruction
    e. refinement and redesign of instruction in light of student performance.

The CII and the Classroom: Continuity and Coordination

An issue of major concern in the organization and development of the CII is the relationship between the CII and the classroom. In order to achieve the stated objective of providing instruction in the CII that parallels that given in the classroom, mechanisms that insure continuity and coordination were established at the formal and informal levels.

At the formal level, an important step in achieving the desired relationship came with the adoption of an interdisciplinary agreement which specifies procedures to be followed when a course is offered at the CII.

1. The CII will provide students with an alternative to the college classroom in as many courses as there exists a demand and for which the individualized format is suitable.

2. Initiation of a new course to be given in the CII may be made by the Academic Dean, the Divison Chairs, or the Faculty. In each case, there will be consultation with the appropriate Division Chair.

3. Course objectives and/or syllabi will be given to the Chair of the Divison of Collegiate Studies who will conduct research related to the course and produce a design that will parallel class content and be as self-instructional as possible.

4. Within a three-week period, course representatives and the appropriate Divison Chair will review instructional material and make specific recommendations for improving parts which might be designated as weak. A copy of the revised material will be sent to the Division Chair.

Another formal mechanism is the review of CII instructional policies, procedures, and other pertinent material by the appropriate committee of the faculty association. Such materials were presented to the curriculum committee and the academic standards committee. In addition, the Chairperson of the Division of Collegiate Studies sits on the academic council and reports divisional matters to that council and to the Academic Dean.

In addition to the formal mechanisms, continuity between the CII and the classroom is best achieved at an informal level. Every effort is made to encourage a close working relationship between the CII Staff and their counterparts in the classroom by having a mutual exchange at departmental/divisional meetings, curriculum planning, etc.

The best manifestation of the desired continuity is the relationship between the CII and the department of mathematics. The cooperative relationship between the CII and the Division of Health Careers is also noteworthy. The most recent initiation of a collaborative effort with the CII has come from the chemistry department. Also, a search of the instructional materials market is underway in an effort to provide courses for the Division of Business Administration.

Course Materials and Instructional Design

All CII course materials are purchased from the commercial markets and validity and reliability studies are secured where available. The Division Chair researches the commercial market and secures the material for evaluation and adoption. In some cases, notably in the Division of Health Careers, instructional material is referred to the CII by the appropriate department. In the Spring, 1987 semester, for example, the CII will offer the course "Medical Terminology" for that Division. The course materials, an entirely CAI format, were selected and purchased by the Divison of Health Careers and referred to the CII.

After commercially prepared instructional materials are obtained, the real work of instructional design begins. This is done by the CII Staff. Some commercially prepared instructional materials are more complete than others, but most need some degree of change and redesign to insure that each CII course contains the following:

1. Stated Learning Objectives or Outcomes.

   These are listed for and discussed with students prior to the beginning of their study in any CII course.

2. Primary and Alternative Modes of Instruction.

   This critical area involves designing various instructional approaches in order to accommodate students' learning styles or preferences. For example, the primary mode of instruction in MA 1101 (Fundamentals of Mathematics) is the Audio-Tutorial. If students cannot learn in this format, they may change to a programmed text format, which leads to attainment of the same objectives.

3 Supplemental Activities.

   These include skill sheets, language activities, charts, audio-visual-lecture segments, games and simulations, etc. -- in short, a wide range of instructional activities designed to strengthen the primary instruction. Supplemental activities are made self-correcting.

4. Tests

   Each CII course involves extensive testing. Each course contains:

   a. Pre-Course Testing

   b. Placement Testing

   c. Unit or Lesson Mastery Testing

   d. Oral and/or Writing Skill Testing

   e. Post-Course Testing

5. Parallel Items and/or Activities

Original tests are not used for analysis purposes. Parallel items or duplicate activities have been prepared for each item on each test and these are used for analysis of problems and directed re-study.

When implementation of the instructional design is completed, the instructional materials (including syllabi, tests, supplemental activities, multi-media activities, skill sheets, guided study sheets, etc.) for each course are bound in heavy-duty notebooks and are available for examination by the College community.

The CII Educational Management System

For a non-traditional educational structure such as the CII to be effective, it must be managed systematically and the components of the system must be clear to all concerned.

The educational management system in operation at the CII includes: the communications system, the registration/scheduling system; the records-keeping system; the course-management system; and the monitoring system.

1. The Communications System

A. The General Orientation

Students are given a detailed Orientation to the CII before they begin courses. The orientation information is presented in a small-group lecture format and in the accompanying brochure which students keep. The General Orientation is also available on cassette tape.

B. The Subject Orientation

Students are next given a thorough Subject-specific Orientation at which course objectives, course procedures, course syllabi, and other pertinent instructional details are presented by the appropriate CII Staff member. This Subject Orientation is also available on cassette tape.

C. Student Agreement Contract

Upon completion of both the General Orientation and the Subject-Orientation and in conference with the CII Staff member students sign an Agreement Contract in which they indicate that they understand the policies and procedures in effect at the CII and that they agree to same.

D. IP (IN PROGRESS GRADE) Contract

If the IP grade is given, the CII Staff member and the student agree to the conditions governing completion of the course; the conditions are written into the IP contract; and both parties sign the contract, which is then kept in the student's folder.

E. Letters of Special Arrangements

Letters confirming individual course arrangements are mailed to the students involved and copies are kept in student files.

F. Mid-Term Warnings

The CII uses the regular College system of notifying students of academic deficiency at the mid-term point. The formal notification, which is sent by the Registrar's office, is accompanied by confirming letters sent by the CII and/or by individual conferences.

G. Final Grades

The CII uses the regular College system for notifying students of their Final Grades at the end of each semester. The IP grade is reported on the official transcripts.

II The Registration/Scheduling System

A. Course Meeting Times

All CII study is scheduled. There is no drop-in provision. Students select their course meeting times, arranging hours and days in any way that is helpful to them. Once they have selected the course meeting times, however, they must keep them until the end of the semester.

B. Required Hours

Students are required to spend a minimum of 3 hours per week in the CII for each 3-credit course, as they must do in a classroom. Students in foreign language courses and in English-as-a-Second Language courses must spend a minimum of 4 hours. Students may request additional study time, but it must be scheduled. During the Orientations, students are encouraged to add hours beyond the minimum.

C. The College Master Schedules

CII courses are listed on the College's Master Schedules at the normal registration periods. Courses are listed under the CII section and under appropriate Divisions. Thus students can choose between two instructional modes.

D. Continuous Enrollment

Students may enroll in a course at any time during the semester. This option and enrollment in courses not listed on the Master Schedule, but available in the CII, are facilitated by the "Off Term Agreement" authorized by the College Registrar.

E. Continuous Study

The IP (IN-PROGRESS) Grade enables students to by-pass the traditional semester's end and continue courses without interruption.

III The Records-Keeping System

A. Daily Sessions Cards

Once students have selected their course meeting times, they fill out a Daily Sessions Card upon which their course meeting time is printed. This card, which also contains detailed information regarding testing, course progress, and attendance, becomes an integral part of both the records-keeping and the monitoring systems. Daily Sessions Cards are given to students at the beginning of each course meeting time and are collected at the end

of each. The Cards are then examined by the CII Staff to identify the student who is having difficulty but who has not communicated with the CII Staff. It also enables the Staff to identify students who are progressing through material quickly and may be in need of acceleration.

B. Records of students' progress in any CII course are maintained extensively. Students' daily progress, testing, and attendance are recorded on the Daily Sessions Cards. Original tests and other instructional activities which bear external evaluations or grades are filed in individual student folders. Back-up records are also stored on computer disks.

C. Attendance and Punctuality.

The door to the CII is closed 15 minutes after the beginning of a course meeting time. Without having made prior arrangements with the CII, students may not enter after that time and are marked absent. If a student is absent for a total of three times and has not contacted the CII, the Daily Sessions Card is removed from the active file and the student is so informed by letter. The student is asked to meet with the CII Coordinator and must do so before he or she is permitted to return to the CII. Subsequent absences result in loss of original course meeting times and/or administrative withdrawal from the course. All records concerning attendance, punctuality, and special arrangements are kept on file.

D. Tests

All tests are stored in locked file cabinets and are kept on file for two years.

IV. Course-Management System

The distinctive feature of the course-management system is the students' control of their progress and learning. This is stressed repeatedly both at the informal level and at the formal level of systems operating in the CII.

A. At the scheduled course meeting times, students arrrive promptly, pick up their Daily Sessions Cards, secure needed primary mode instructional materials, and go directly to fully equipped individual carrels in specialized study rooms.

B. Students derive their primary instruction in any course by interaction with the primary instructional mode: the audio/tutorial, the programmed text, the a/v or video, the computer. Their interaction is carefully defined, directed and monitored by the CII Staff. Throughout the course meeting time, students read, take notes, do self-correcting exercises and activities, write, play and re-play audio and video tapes, test, and meet with the CII Staff on a continuous basis. Passivity is virtually impossible.

C. Mastery Learning is self-imposed by students early in their course work. They quickly learn that they must fully understand one concept or part of a concept before moving on to the next.

D. Throughout the course meeting time, students meet with the CII Staff whenever they cannot understand part of the instruction and/or when they warrant acceleration.

E. Students determine when they are ready to take tests. Tests are administered and corrected by the Testing Room Monitor within the course meeting time. Test results are recorded on the Daily Sessions Cards and the students are then directed by the Testing Room Monitor to the next step:

1. Study of the next unit, if mastery has been demonstrated.
2. Directed re-study of the unit, if mastery has not been demonstrated.
   (Manuals of re-study directions have been prepared by the CII Staff and are kept in the Testing Room for use by the Monitor.)
3. Conference with the CII Staff

Students are permitted to take only one test during the course meeting time. They may re-test a non-mastered unit upon evidence of re-study and/or with the permission of the CII Staff.

Oral and written performances for students in foreign languages, ESL, and English Composition are evaluated by the appropriate CII Staff member. Students in all foreign languages and ESL courses are given private, individualized conversational practice each week, and a half-hour oral performance, for each course, is part of the final examination.

F. Completion of a Course

Students may take the final examination in a course only after completing all prior units at the designated mastery level. The IP grade allows completion of courses after semester's end but is granted only if a student has completed 50% of the course work and has been in good standing in terms of attendance and punctuality.

V. The Monitoring System

A. Testing Room

The Testing Room, which processes approximately 600-800 tests per week, is staffed at all times. Personnel are trained for test correction and monitoring. Policy regarding student behavior in the Testing Room is published. Directions for test correction and guidelines for parallel items and directed re-study are provided with each test in each course. Tests are filed hourly and test security is insured.

B. Study Rooms

CII Study Rooms are monitored by CII Staff on a regular basis. Proper student behavior, in accord with College Policies, is enforced, and an atmosphere conducive to study and to learning is maintained.

C. Student Progress

Student Progress is monitored on a regular and continuous basis. Intervention, where appropriate, is exercised by the CII Staff.

D. CII Staff Assignments

The CII Coordinator supervises the day-to-day operation of the CII and is responsible for insuring maximum Staff monitoring of students and their course progress.

The CII Professional Staff

The CII Staff consists of five (5) full-time professionals, nine (9) part-time professionals, one (1) Division secretary, two (2) Testing Room Monitors, and four (4) Staff Assistants.

Each professional staff member in the CII is a teacher and a subject-matter specialist. Each brings experience from the traditional classroom. But the nature of individualized instruction requires that they develop new knowledge and new skills and that they bring new commitments to students and to the teaching/learning process.

The academic backgrounds of the professional staff reflect the interdisciplinary focus of the CII. Each has major responsibility for an academic speciality, but each becomes familiar with all course materials; thus, the CII Staff is able to function as an instructional team. The Staff's basic commitment is to the active involvement of students with impeccably designed, self-directing instructional materials as the way toward learner independence.

This commitment means that their relationship to teaching is considerably different from the way it was in the classroom. They learn to talk less, to tell less, to show less; instead, they learn to elicit the talking and telling and showing from the student. To a student statement "I don't understand any of this" they respond by helping the student back up through the instructional sequences to find out for himself/herself where the not knowing started and why.

Their major responsibilities are to provide a sound instructional design in their courses, direct students' interaction with the design, monitor and evaluate course progress and intellectual growth, analyze components of the instruction, and redesign the instruction as often as necessary until it insures maximum student learning.

CII Students

Students take courses in the CII mainly for the following reasons:

1. They want to go faster than they can in a classroom.
2. They want to go slower than they can in a classroom.
3. They like the self-paced, individualized format.
4. They like the flexibility which CII Scheduling and continuous enrollment/continuous progress permit.

The major difference which students identify between classroom sections and CII sections is the degree of personal accountability and the absence of anonymity. The CII focus is on the individual and his or her progress through a course, a progress carefully monitored by the CII Staff. Students know that mastery (normally at 80%) must be demonstrated on a test or they may not continue to the next segment of the course. They know that they must complete specified supplemental work before they are permitted to re-test. They know that they must complete all course work or they may not take the final examination. They know that there is no way to "cram" in a CII course. They know, too, that they must be punctual and that they must be regular in their attendance or they will not be permitted to continue in a course.

Student Evaluations of Instruction are given each semester, with a completion rate of 93%. The Evaluation Form parallels that used by faculty in the classrooms. Evaluations of CII courses and instructors are generally favorable. To the question "Would you take another course in the CII?" the Yes response is consistently between 85% and 90%.

Individualized Instruction is not meant for all students, however. Those who learn best in a group setting, or who desire anonymity, or who accept borderline academic performance in themselves are not suitable for the individualized format.

A major goal of CII future planning is to implement a process whereby student learning style preference is measured and then used to recommend enrollment in the appropriate instructional setting - either classroom or CII.

Conclusion

Student Evaluations and comparative data regarding CII and classroom instruction emphasize that the quality of instruction at the CII is high and that the educational experience is a positive one for students.

The CII serves the needs of the increasingly large number of non-traditional students for whom work, family, and financial responsibilities necessitate a more flexible academic model for taking college courses. It also serves the needs of the many students of all ages who learn in ways which the traditional college classroom cannot accommodate.

The CII also has contributed toward modifying some traditional educational perspectives. It has helped to strengthen the viability of multiple modes of instruction at the college level and has helped to promote the value of providing college students with a choice of instructional formats. It also has encouraged reconsideration of the traditional college classroom as the exclusive domain for providing college courses.

In conclusion, the CII looks to the future with enthusiasm, certain that its impact on the College, in its brief history, its assimilation into the curriculum,, and its academic credibility are substantial indicators of future achievements.